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| 09/727,554      | 12/04/2000  | Masahiro Arai        | 040679/1173         | 4320             |

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EXAMINER

CORRIGAN, JAIME W

ART UNIT

PAPER NUMBER

3748

DATE MAILED: 04/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/727,554

Applicant(s)

ARAI ET AL.

Examiner

Jaime W Corrigan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 and 6 is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-5, 7-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to an Amendment filed on March 12, 2002. Claims 3, 6 have been amended. Overall, claims 1-8 are pending in this application. The arguments with respect to the references applied in the first office action were deemed not persuasive. A final rejection is set forth below.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Havstad (PN 5,224,460).

Regarding claims 1, 5 Havstad discloses a method for controlling intake air of an internal combustion engine, the engine having at least one combustion chamber provided with intake means together with an intake manifold provided with a throttle valve (See Figure 1), wherein the opening and closure timings of the intake means are adjustable entirely independently from the crankshaft position to control the amount of intake air supplied to the combustion chamber (See Abstract), the method comprising : a control for a response adjustment to variable valve timing control of the intake means for unthrottled intake air control (See Figure 2 (34), (36)); Abstract Lines 1-5, Lines 10-14; Column 2 Lines 32-37).

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Regarding claim 2 Havstad discloses providing an engine response performance during unthrottled intake air control as much as an engine response performance during throttled intake air control (See Figure 2, Column 5 Lines 5-16, Column 8 Lines 9-20).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Havstad (PN 5,224,460) in view of Atago (PN 6,286,478).

Havstad discloses the invention as recited in claim 1, above, and further discloses processing a second operation variable to cause said response adjustment (See Column 7 Lines 25-35).

Havstad fails to disclose determining a first operation variable indicative of a target intake air and a target valve timing based on the first operation variable; to close the intake means at a valve closure timing indicated by said processed second operation variable; and additionally fails to disclose a computer readable storage medium.

Atago discloses determining a first operation variable indicative of a target intake air (See Abstract, Column 13 Lines 40-45); determining a second operation variable

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indicative of a target valve timing based on said first operation variable (See Abstract, Column 13 Lines 40-45); varying the valve closure timing of the intake means to close the intake means at a valve closure timing indicated by said processed second operation variable (See Abstract, Column 13 Lines 40-45); and Atago further discloses a computer readable storage medium having stored therein data representing instructions executable by a computer (See Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the valve timing and computer storage medium taught by Atago in the Havstad device since it would improve engine response performance.

#### ***Allowable Subject Matter***

Claims, 3, 6 are allowed.

#### ***Response to Arguments***

Applicant's arguments filed 3-12-02 have been fully considered but they are not persuasive.

In response to applicant's argument that Havstad fails to disclose a response adjustment to variable valve timing control of the intake valve for unthrottled intake air control. The examiner wishes to point that Havstad provides the teaching of "a response adjustment to variable valve timing control of the intake valve for unthrottled intake air control (See Figure 2 (34), (36)); Abstract Lines 1-5, Lines 10-14; Column 2

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Lines 32-37)." The examiner would like to point specifically to reference numerals (36), (34) of Figure 2 showing a wide open throttle (unthrottled) response at various engine speeds (variable timing).

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Conclusion***

Any inquiry concerning this communication from the examiner should be directed to Examiner Jaime Corrigan whose telephone number is (703) 308-2639. The examiner can normally be reached on Monday - Friday from 8:30 a.m. – 6:00 p.m. 2<sup>nd</sup> Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reached on (703) 308-2623. The fax number for this group is (703) 308-7763.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

JC

Jaime Corrigan

*Jaime Corrigan*  
Patent Examiner

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April 25, 2002

*Thomas Denion*

THOMAS DENION  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700